

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

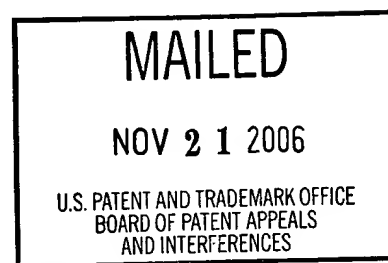
**UNITED STATES PATENT AND TRADEMARK OFFICE**

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Ex parte EDDY VAN BEEK, INGRID SOMERS  
ERIC PEYS and BENEDIKT SAS

Appeal No. 2006-0151  
Application No. 09/753,381

ON BRIEF



Before SCHEINER, MILLS and GREEN, Administrative Patent Judges.

SCHEINER, Administrative Patent Judge.

**DECISION ON APPEAL**

This appeal involves claims to a method for improving the effectiveness of exogenous enzymes in animal feed by adding particular surfactants to the animal feed. The examiner rejected claims 1-7 and 10-13 under 35 U.S.C. § 112, first paragraph as lacking adequate written descriptive support in the specification as originally filed. Claims 8 and 9 are also pending in the application, but have been withdrawn from consideration. We have jurisdiction under 35 U.S.C. § 134.

**Background**

"The use of [exogenous  $\alpha$ -amylase,  $\alpha$ -galactosidase,  $\beta$ -glucanase, cellulose, lipase, and/or xylanase] in feed formulations for animals, particularly poultry, is a well-accepted practice in today's highly specialized animal production industry . . . to improve

the nutritional value of feed formulations that have high inclusion levels of small grain cereals such as wheat and barley, in addition to high fiber material such as sunflower, rape seed, peas and beans” (Specification, pages 1-2).

“The present invention adds a biosurfactant, specifically lecithin and/or lysolecithin, to animal feed formulations to boost the effect of exogenous enzymes and thereby reduce the level of such enzymes that must be added to the feed while maintaining [their] effectiveness” (*id.*, page 2). “[W]hen [ ] lysophospholipid/phospholipid-type surfactants are used, a reduction of up to 50% of the enzymes used in the feed can be made without a degradation in the desired effect of the enzymes” (*id.*, page 3).<sup>1</sup>

#### The Claims

Claims 1, 10 and 13 are representative:

1. A method for improving the degradation by an exogenous enzyme of the neutral detergent fiber in an animal feed, comprising the step of adding to an animal feed containing the exogenous enzyme a surfactant selected from the group consisting of lecithins that have been enzymatically enriched in the amounts of lysophospholipids to contain at least 5% by weight of lysophospholipids to the amount of lysophospholipids plus phospholipids.

10. A method as defined in claim 1, wherein the degradation of neutral detergent fiber is increased by at least about 50% over neutral detergent fiber degradation by the exogenous enzyme alone.

13. A method of reducing the amount of exogenous enzyme required to achieve a preselected level of degradation of neutral detergent fiber in an animal feed, comprising the step of adding to the animal feed an exogenous enzyme selected from the group consisting of  $\alpha$ -amylase,  $\alpha$ -galactosidase,  $\beta$ -glucanase, cellulase, lipase and xylanase; a protease; and a surfactant selected from the group consisting of lecithins that have been enzymatically enriched in the amounts of lysophospholipids to contain at least 5% by weight of lysophospholipids to the amount of lysophospholipids and phospholipids, and wherein the amount of the exogenous enzyme added is reduced by up to about 50% without a reduction in degradation of neutral detergent fiber.

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<sup>1</sup> Lysolecithin is a lecithin that has been enriched in lysophospholipids through enzymatic hydrolysis.

### Discussion

The examiner has rejected all of the pending claims under 35 U.S.C. § 112, first paragraph, “as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time of the application was filed, had possession of the claimed invention” (Examiner’s Answer, page 3). We will reverse this rejection.

The language which gives rise to the examiner’s rejection is the recitation “lecithins that have been enzymatically enriched in the amounts of lysophospholipids to contain at least 5% by weight of lysophospholipids to the amount of lysophospholipids plus phospholipids” (claim 1).<sup>2</sup> Specifically, the examiner argues that “[t]he amount ‘at least 5%’ is a range of 5-100%” (Examiner’s Answer, page 5), and represents a “new concept” (i.e., “new matter”), which is “neither [ ] literal[ly] support[ed] in the as-filed specification by way of generic disclosure,” nor by “specific examples” (id., page 3). The examiner notes that the examples in the specification “use specific compositions” (id.), in specific amounts, “not compositions containing unlimited amounts of lysophospholipids as now recited in the phrase ‘at least’” (id.). Moreover, the examiner asserts that these compositions are not representative of lysolecithins in general because “Lysoprin is . . . ‘enriched’ in lysophosphatidylcholine, not in any ‘lysophospholipid’” (id.), while “Bolec MT . . . contain[s] only lysophosphatidic acid and lysophosphatidyl[ ]ethanolamine” (id.).

The examiner further asserts that “the results claimed at claims 10 and 13” (i.e., “degradation of neutral detergent fiber is increased by at least about 50%” (claim 10) and

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<sup>2</sup> This language was entered by the amendment filed July 19, 2004.

“exogenous enzyme is reduced by up to about 50% without a reduction in degradation of neutral detergent fiber” (claim 13)), are not supported by the examples because the examples “pertain to specific surfactant preparations” (Examiner’s Answer, page 4).

The purpose of the written description requirement is to “ensure that the scope of the right to exclude, as set forth in the claims[,] does not overreach the scope of the inventor’s contribution to the field as far as described in the patent specification.” Reiffin v. Microsoft Corp., 214 F.3d 1342, 1345, 54 USPQ2d 1915, 1917 (Fed. Cir. 2000). To satisfy the requirement, the specification need not contain the identical words used in the claims. See Purdue Pharma L.P. v. Faulding, Inc., 230 F.3d 1320, 1323, 56 USPQ2d 1481, 1483 (Fed. Cir. 2000). Rather, the specification must “convey with reasonable clarity to those skilled in the art that, as of the filing date sought, [applicant] was in possession [of] . . . whatever is now claimed.” Vas-Cath, Inc. v. Mahurkar, 935 F.2d 1555, 1564, 19 USPQ2d 1111, 1117 (Fed. Cir. 1991).

After carefully reviewing the specification, we are persuaded that it reasonably conveys possession of the claimed invention, including the open-ended recitations “at least 5% by weight of lysophospholipids” (all claims), “at least about 50%” (claim 10), and “up to about 50%” (claim 13), to one of skill in the art.

The specification teaches that “lecithin and/or lysolecithin [surfactants] . . . improve the activity of [exogenous] enzymes . . . in breaking down animal feeds or animal feed ingredients to increase the nutrients available to the animal” (Specification, page 2), and “a reduction of up to 50% of the enzymes used in the feed can be made without a degradation in the desired effect of the enzymes” when “lysophospholipid/ phospholipids-type [ ] surfactants are used” (id., page 3).

The specification also describes specific experiments in which two commercially available lecithin/lysolecithin surfactants, Lysoprin and Bolec MT (each of which contains approximately 33% lysophospholipids), were added to animal feed containing various exogenous enzymes (id., page 4). Tables 1 and 2 of the specification show the results obtained when “feed samples [were] treated with enzyme products and combinations of enzyme products with lysophospholipid/phospholipid type (LPC/PC-type) [ ] surfactants” (id., page 9). In certain cases, the “LPC/PC-type” surfactants contained 16% Lysoprin (S2) or 16% Bolec MT (S3) (id., Table 1, note 3; Table 2, notes 1 and 3). Thus the S2 and S3 surfactants, as used in the experiments, contained approximately 5% lysophospholipids. In addition, according to the specification, the data in Table 2 indicate that “further improvements can be achieved by choosing the best LPC/LP-type of surfactant, which in this case is the fully converted product, S4” (Specification, page 10). S4 is yet another surfactant described in U.S. Patent No. 6,068,997 “containing approx. 16% lysolecithin . . . by weight” (Specification, Table 2, note 5).

Finally, as pointed out by appellants, Table 2 shows, among other things, that “degradation of neutral detergent fiber [(NDF)] by the exogenous enzyme ENZ-Xylanase at 250 Kg/T and the surfactant Tween (not a converted lecithin) resulted in an NDF degradation of 2.89%, whereas the ENZ-Xylanase at 250 Kg/T combined with . . . the surfactant S4 (a lysolecithin) resulted in an NDF degradation of 10.72%” (Reply Brief, page 4). Table 2 also shows that “NDF degradation by . . . the exogenous enzyme ENZ-Barley at a level of 500 Kg/T was 5.10% and [ ] NDF degradation by . . . ENZ-Barley at a level of 250 Kg/T with the addition of surfactant S2 (a lysolecithin) resulted in the same 5.10%” (id.).

We find that the specification's generic disclosure regarding the effect of lysolecithins on the activity of exogenous enzymes in animal feed, coupled with the specification's specific examples using 16% of two different lysolecithin surfactants containing about 33% lysophospholipids (i.e., a final concentration of 5%), and 16% of another lysolecithin, described as "fully converted," reasonably conveys to one of skill in the art that appellants were in possession of an "open-ended" method using lysolecithin surfactants containing "at least 5% lysophospholipids" to improve the activity of exogenous enzymes in animal feed. We also find that the specification reasonably conveys to one of skill in the art that surfactants containing at least 5% lysophospholipids can be used to improve the effectiveness of exogenous enzymes in animal feed by at least 50%, or can be used to reduce the amount of exogenous enzyme needed in animal feed by up to 50%.

Accordingly, the rejection of claims 1-7 and 10-13 under 35 U.S.C. § 112, first paragraph, is reversed.

REVERSED



Toni R. Scheiner  
Administrative Patent Judge



Demetra J. Mills  
Administrative Patent Judge



Lora M. Green  
Administrative Patent Judge

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